Controlling hair follicle signaling pathways through polyubiquitination.

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Public Summary:

Scientific Abstract:
Hair follicle development and maintenance require precise reciprocal signaling interactions between the epithelium and underlying dermis. Three major developmental signaling pathways, Wnt, Sonic hedgehog, and NF-kappaB/Edar, are indispensable for this process and, when aberrantly activated, can lead to skin and appendage neoplasms. Recent data point to protein polyubiquitination as playing a central role in regulating the timing, duration, and location of signaling. Here we review how polyubiquitination regulates the stability and interaction of key signaling components that control hair follicle development and regeneration.